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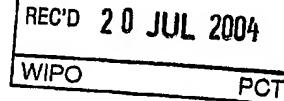
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Notes

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The
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**Request for grant of a
Patent
Form 1/77**

Patents Act 1977

① Title of invention

1 Please give the title
of the invention

CONTAINER HINGE WITH CUSTOMS SEAL
PROVISION.

② Applicant's details

First or only applicant

2a If you are applying as a corporate body please give:

Corporate name

Country (and State
of incorporation, if
appropriate)

2b If you are applying as an individual or one of a partnership please give in full:

Surname REYNARD

Forenames KENNETH

2c In all cases, please give the following details:

Address DURALOC LIMITED

UNIT 7 CARLTON MINIOTT BUSINESS PARK

THIRSK

N. YORKSHIRE

UK postcode
(if applicable)

YO7 4NF.

Country

ENGLAND.

ADP number
(if known)

8222226001

2d, 2e and 2f: If there are further applicants please provide details on a separate sheet of paper.

<input type="checkbox"/> Second applicant (if any)
2d If you are applying as a corporate body please give: Corporate name
Country (and State of incorporation, if appropriate)
2e If you are applying as an individual or one of a partnership please give in full: Surname Forenames
2f In all cases, please give the following details: Address UK postcode (if applicable) Country ADP number (if known)
② An address for service in the United Kingdom must be supplied Please mark correct box
3a Have you appointed an agent to deal with your application? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> go to 3b please give details below Agent's name WILLIAM ORR. URQUHART DYKES & LORD. Agent's address 8TH FLOOR. TOWER HOUSE MERRION WAY LEEDS W. YORKSHIRE LS2 8 PA. 1644 002
3b If you have not appointed an agent please give a name and address in the United Kingdom to which all correspondence will be sent: Name Address Postcode ADP number (if known) Daytime telephone number (if available)

④ Reference number

4 Agent's or applicant's reference number (if applicable)

⑤ Claiming an earlier application date

5 Are you claiming that this application be treated as having been filed on the date of filing of an earlier application?

Please mark correct box

Yes No *go to 6*

please give details below

number of earlier application or patent number
 filing date

(day month year)

and the Section of the Patents Act 1977 under which you are claiming:

15(4) (Divisional) 8(3) 12(6) 37(4)

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⑥ Declaration of priority

6 If you are declaring priority from previous application(s), please give:

⑥ If you are declaring priority from a PCT Application please enter 'PCT' as the country and enter the country code (for example, GB) as part of the application number.

Please give the date in all number format, for example, 31/05/90 for 31 May 1990.

Country of filing	Priority application number (if known)	Filing date (day, month, year)

④ The answer must be 'No' if:
 ④ any applicant is not an inventor
 ④ there is an inventor who is not an applicant, or
 ④ any applicant is a corporate body.

④ Please supply duplicates of claim(s), abstract, description and drawing(s).

Please mark correct box(es)

④ You or your appointed agent (see Rule 90 of the Patents Rules 1990) must sign this request.

Please sign here 

A completed fee sheet should preferably accompany the fee.

⑦ Inventorship

7 Are you (the applicant or applicants) the sole inventor or the joint inventors?
Please mark correct box
 Yes No **A Statement of Inventorship on Patents Form 7/77 will need to be filed (see Rule 15).**

⑧ Checklist

8a Please fill in the number of sheets for each of the following types of document contained in this application.

Continuation sheets for this Patents Form 1/77 **NIL**

Claim(s) **1**

Description **1**

Abstract **1**

Drawing(s) **44**

8b Which of the following documents also accompanies the application?

Priority documents (please state how many) **NIL**

Translation(s) of Priority documents (please state how many) **NIL**

Patents Form 7/77 – Statement of Inventorship and Right to Grant (please state how many) **NIL**

Patents Form 9/77 – Preliminary Examination/Search **NIL**

Patents Form 10/77 – Request for Substantive Examination **NIL**

⑨ Request

I/We request the grant of a patent on the basis of this application.

Signed 

Date **22. MAY 2003.**
(day month year)

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 The Patent Office
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Background information.

For almost fifty years goods have been moved around the world in shipping containers. The dimensions of such containers have been established and controlled by The International Standards Organisation (I.S.O.). Likewise standards of locking and sealing the containers against illegal entry or insertion of contraband after the container has been closed by the shipper have long been established by Transport International Routiers (T.I.R.).

The doors of such containers have always been the most venerable area for illegal entry into the cargo space. Until recently it was assumed that the current practice of using two doors commonly of steel construction hingedly mounted to the vertical posts of the container at several positions, with the hinge pivot pins welded in position during construction so as to render them impossible to remove without significant mechanical damage which would be obvious at customs inspection.

To secure the doors in the locked position one or two locking bars on each door are typically welded or bolted, each locking bar is fitted with a cam at each end which engages with a keeper which is welded to the horizontal members at the top and bottom of the frame of the container. The locking bar is pivotally mounted and a handle is provided by means of which the cams can be rotated from the open to the locked position. In the locked position a handle latch is provided where the handle can be retained in position. Holes are provided in the latch and the handle which is in line when the door is locked which allows the insertion of a proprietary customs seal.

Again it has been assumed that container doors built and sealed in such a manner could not be opened without either breaking the seals or doing sufficient mechanical damage that the entry would be obvious on inspection.

It has also been accepted practice to fit only one customs seal in the handle of the bar nearest the centre of the container on the right hand door as this door is designed to overlap the left hand door and must be opened first.

Recently a major problem has arisen.

With the availability of high powered battery operated hacksaws and sophisticated adhesives commonly known as liquid metal, it has become relatively easy to cut through the cams of the customs sealed locking bar adjacent to the mounting brackets then open the doors by actuating the handles of the locking bars that have not been sealed, leaving the customs seal intact.

On closing the doors a small amount of liquid metal is applied to the saw cut, leaving the container apparently untouched unless a detailed inspection is carried out.

Claims.

1. A shipping container where one or more hinges and brackets are provided with a location which can receive a customs seal.
2. A shipping container as at 1 where the hinge/s are to distribute the racking forces into the container post at a point inboard from the pivot pin.

Abstract.

A description of the current invention with the aid of the following drawings follows.

Fig.1 Shows a typical I.S.O. shipping container end frame complete with doors (1),hinges (2),locking bars(3),cams and keepers(4),operating handle(5),and handle latch with customs seal provision(6).

Fig.2 Shows a typical section through a container door-post, door and hinge as used at present.

Fig.3 Shows the same section with the proposed hinge assembly and bracket with customs seal provision (7).

Fig.4 Shows a cross-section of the proposed hinge.

The current invention is intended for use on I.S.O. shipping containers and similarly constructed shipping and storage containers to provide increased security at minimal extra cost.

On a typical door frame and door assembly as shown in Figure 1. Where the right hand door has an overlap plate (8) or some other structure to ensure that one door cannot be opened until the primary door has been opened. When a hinge according to the proposed invention is fitted at for example position A generally to the configuration as shown in Fig.4. and provided with a standard customs seal hole 10, the said hole aligning with a similar hole in hinge bracket 11 when the door is in the fully closed position .A standard customs seal can be inserted through the bracket 11 and hinge 2 making it impossible to open the door without breaking the seal. Such damage would be obvious to any inspector. In the preferred embodiment the hinge would be extended inwards toward the doors to provide a shoulder 9 which would contact the door frame when the container is twisted (racked) during transportation. The limiting of such racking movement would eliminate the possibility of the seal being damaged during normal shipping and handling operations.

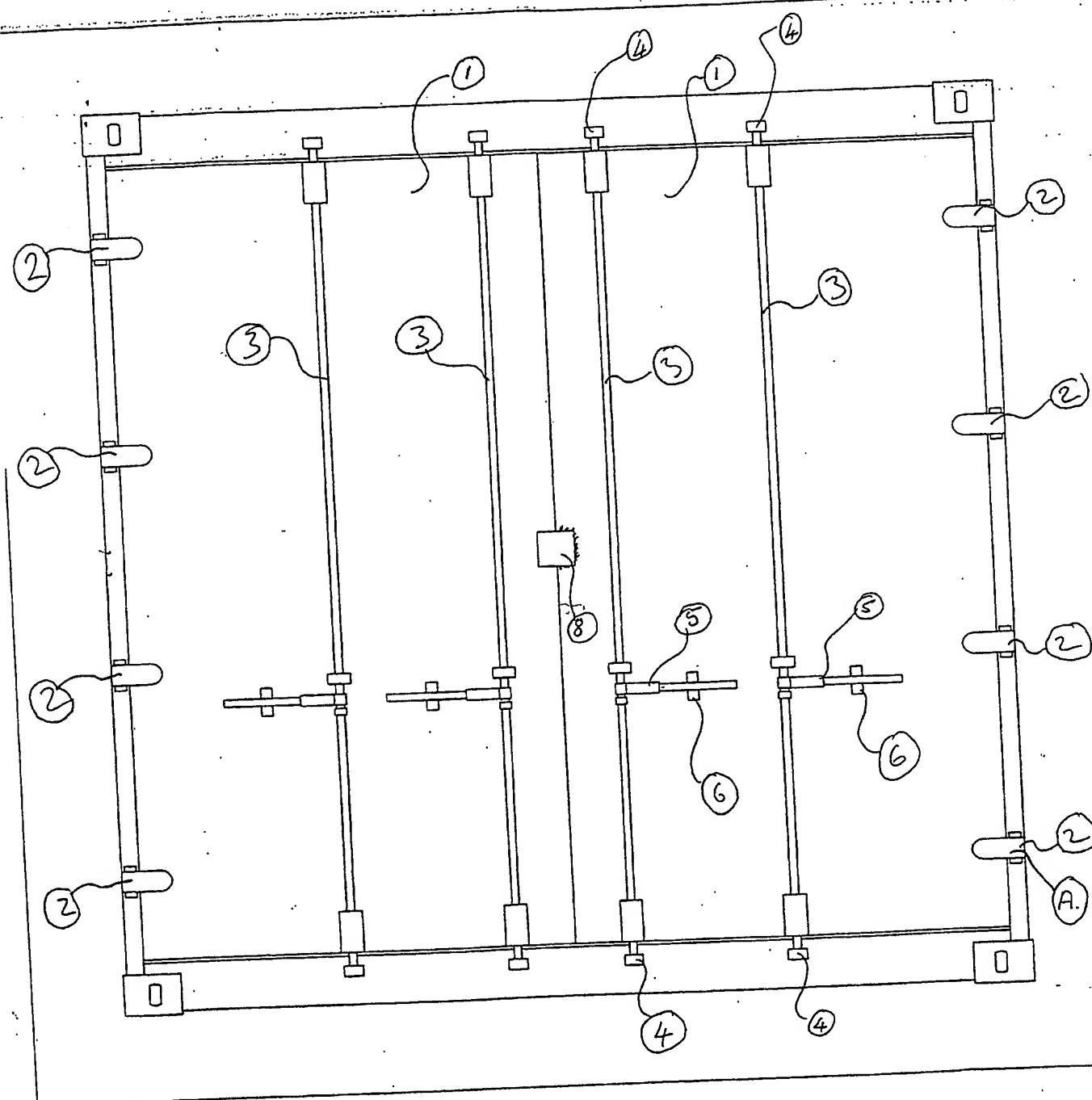


FIG. 1

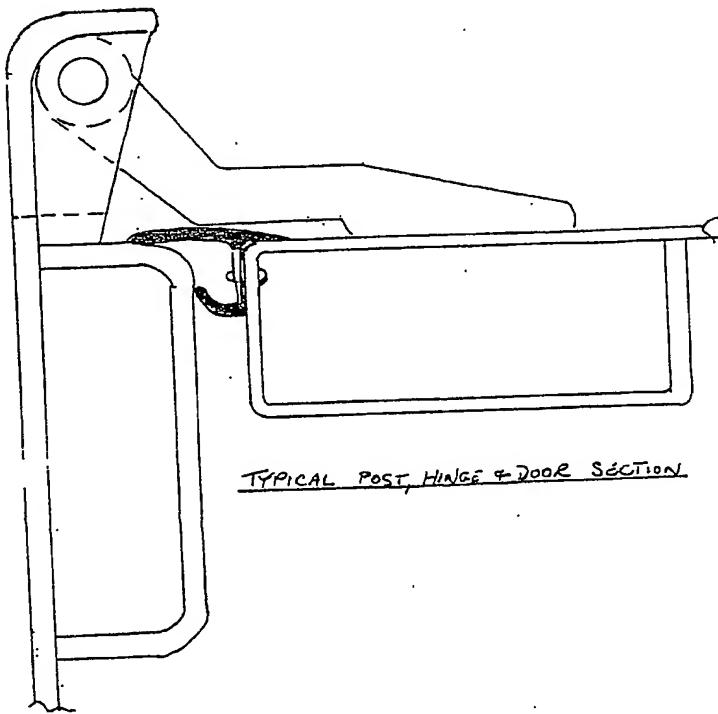


FIG 2.

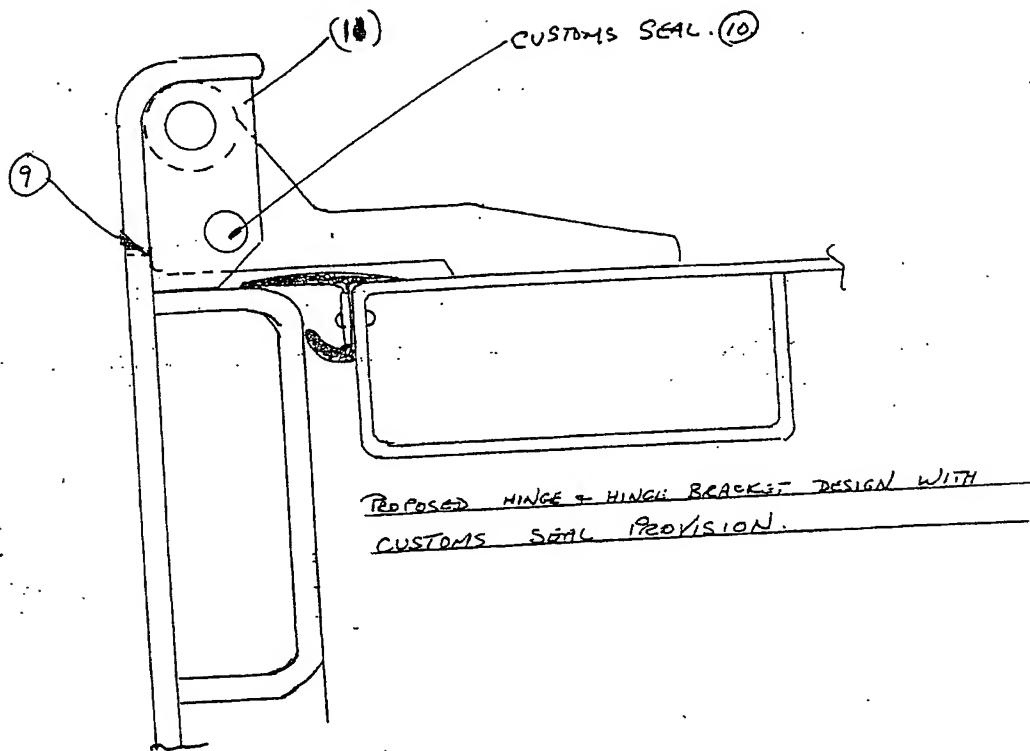
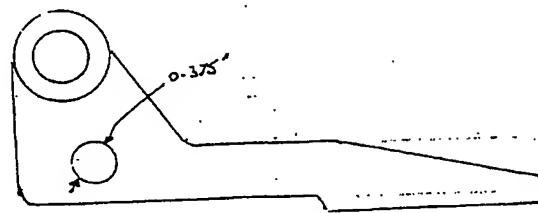


FIG. 3



PROPOSED HINGE WITH 0.375" SEAL HOLE TO BE FITTED
LOWER R.H. POSITION.

FIG 4

PCT/GB2004/002220

Quarterly Dates + Lists

(23/m files 17/6/04)

PCT/GB2004/002220



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